

VEGETABLE CROPS UPDATE

Volume 9

December 1999

No. 3

Cultivar Selection

Hector R. Valenzuela, Dwight Sato, Alton Arakaki, Randall T. Hamasaki, Robin Shimabuku, Steven Fukuda, and Roy Yamakawa.

Cultivar selection is one of the critical decisions made during the vegetable crop production process. Seed quality is important to assure proper germination, stand establishment, tolerance or resistance to major pests and diseases, and growth adaptation to local growing conditions. CTAHR maintains a Seed Program that sells seed from vegetable varieties bred in the Horticulture department. Commercial growers still rely on some of the seed produced by the CTAHR Seed Lab, especially green onions, long eggplant, snap beans, kai choy, and sweet corn. The other cultivars sold by the UH Seed lab (tomato, bulb onion, broccoli) are more adapted for home gardening and are not grown to a large extent by commercial producers. Cultivars used by commercial growers obtained from out-of state, originate both in Asia, and in the continental U.S. Popular Asian Seed Companies (Sakata, Takii, HungNong now a subsidiary of Asgrow) also have stations in the Continental U.S. Local commercial growers often obtain their out-of-state seed from outfits in the continental U.S. that sell seed from a variety of Vegetable Seed Breeding Companies. Such "wholesale" companies include Champion, Chesmore, Green Barn, Rupp, Keithly Williams, and Twilley. The address of these and other seed companies are listed below. The UH Vegetable County Extension agents, regularly conduct cultivar trials, to evaluate adaptation of new cultivars to particular growing conditions (see references below).

The cultivars listed below, are those currently recommended in the different vegetable production areas of the state.

Table of Contents:

Item	pg. No.
Variety recommendations	pg. 2-6
Seed Companies	pg. 6
Cover Crop Seed?	Pg. 6
Oriental Veggies?	Pg. 6
References	Pg. 7-8
Veg Statistics 86-97	Pg. 8-13
Sign up to UH Ergonomics Training Program!!	Pg. 14

Notes on the variety lists:

The table below provides little information concerning horticultural quality, potential yields, and resistance to pests and diseases, for each listed variety. Varietal descriptions can be obtained from the seed supplier, seed catalogs, or from your county extension agent.

FT = For Trial Only cultivars. These varieties have been evaluated on a preliminary basis only and have not been subjected to multi-year or multi-location evaluations. To test these varieties on your farm first grown them in small plots to determine local adaptability.

COOPERATIVE EXTENSION SERVICE · 3050 MAILE WAY · UNIVERSITY OF HAWAI'I
HONOLULU, HAWAI'I 96822

The University of Hawai'i at Manoa, College of Tropical Agriculture and Human Resources, Cooperative Extension Service, U.S. Department of Agriculture cooperating in presenting to the people of Hawai'i programs and services without regard to race, color, national origin, sex or disability. It is an Equal Opportunity and Affirmative Action Employer.

Cultivar	Seed Company	Location/Comments	Cultivar	Seed Company	Location/Comments
Asparagus			Burdock		
UC-157	Various	Kauai, OP	Southern	Takii	FT, Molokai, Spr
Jersey Giant	Jersey Asp.	Oahu, For Trial	Top Star		FT, Molokai
Jersey King	Jersey Asp.	Oahu, For Trial	Prominence		FT, Molokai Sum
Apollo	Calif. Asp.	Oahu, For Trial	XPH-852		FT, Molokai, Win
Atlas	Calif. Asp.	Oahu, For Trial	Apollo		FT, Molokai, Win
Basil			Cabbage, Chinese		
Italian Large Leaf	Alf Chris.	Green Leaved, OP	Chine Express	Sakata	Kula
Dark Opal Leaf	Comstock	Red Leaved, OP	Hy-Mark		Kula
Thai	Companion	Oahu, For Trial	Nagaoka 55		Volcano
Thai Lemon	Shepherd	Oahu, For Trial	WR-55	Takii	Kula
UH Sweet	UH	Oahu, For Trial	WR-60	Takii	Kula
Beans, bush					Volcano-winter
Green Crop	Various	Oahu	Blues	Takii	Kula/Volcano
Kentucky Wonder	Various	Oahu	China Flash	Sakata	Kula
Magnum	Asgrow	Oahu, For Trial	Green Seoul	HungHong	Oahu, FT
Rushmore	Asgrow	Oahu, For Trial			(loose leaf)
EX-323	Asgrow	Oahu, For Trial	Shunkei		Volcano
Dorabel (Yellow)	(Cook's)	Oahu, For Trial	Kasumi		Volcano
Beans, pole			Tango		Volcano, Summ./winter
Poamoho	UH	Stingless, RT, OP	Cabbage, Head		
Hawaiian Wonder	UH	rust tolerant, OP	Rookie	Twilley	
Manoa Wonder	UH	RT, OP	Tastie	Sakata	Kula, year-round
Bean, baby lima			Scorpio	Sakata	Kula, Summer
Baby Fordhook	Sun, Burpee	Oahu	Pacific	Sakata	Kula
Bean, Yardlong			CG Cross	Takii	Kamuela
Kiganotaki		Oahu	Ruby Red	Takii	red, Oahu
Black Seeded	Sunrise	Oahu, For Trial	Scarlet O'Hara		red, Oahu, Molokai
Beet			Heads Up	Harris	Oahu, Maui
Early Wonder		Oahu	Tropicana		Oahu, FT
Green Top	Green Barn	Oahu	Green Cup	Takii	Summer planting
Pacemaker II	Burpee	Oahu	Southern Treasure	Takii	Molokai, FT, Sum
Broccoli			Cabbage, Mustard		
Green Valiant	Twilley		Joi Choi	Sakata	white stemmed
Premium Crop	Takii	Kula, Molokai, Spr	Mei Quing Choi	Sakata	green stemmed, H
Emperor	Green Barn	Kula	Waianae Strain	UH	WR, wide stem
Green Comet	Green Barn	Oahu, Molokai,	Shirona Green	Marutane	Alternaria Tolerant
Sum			Green Pak Choy	Marutane	Oahu, Spring FT
Galaxy	Asgrow	Oahu, Molokai, Spr	White Pak Choy	Marutane	Oahu, Spring, FT
Baccus			Red Leaf Mustard	HungNong	Oahu, FT
Packman	PetoSeed	FT, early, Kunia	Green Boy pak choy	Hung Nong	Oahu, FT
Patriot	Sakata	FT, Kunia	Spr= Spring, Sum= Summer; Win= Winter		
Shogun	Sakata	FT, Kunia	WR= resistant to white rust fungi		
Marathon	Sakata	FT, Kunia (late)			
Sprinter	Sakata	FT, Kunia (early)			
Galleon	Sakata	FT, Kunia (early)			
Captain	PetoSeed	FT, Kunia, early			

Cultivar	Seed Company	Location/Comments	Cultivar	Seed Company	Location/Comments
White Pak Choy	Marutane	Oahu, Spring, FT	Semi-white	Hungnong	yellow skin, FT
Red Leaf Mustard	HungNong	Oahu, FT	Jizzer		Oahu, FT
Green Boy pak choy	Hung Nong	Oahu, FT	Panther	(SunSeed)	Oahu, FT
Carrots			Cucumber, European		
Nantes Half Long	Burpee	Kula	Deliva		
Danvers half Long	Burpee	Oahu	Toska 70		FT
Charger		Molokai, FT	Farbio	Stokes	
Fanci Pak		Molokai, FT	Uniflora W		FT
Apache		Molokai, FT	Cucumber, Oriental Slicing		
Crunchy		Molokai, FT	Progress	Takii	H, Oahu
Lady Finger	Sun	baby carrot	Tasty Gem		H, Oahu
Little Finger	Alf Chris	baby carrot	Burpless 69	Sakata	H, Oahu
Cauliflower			Spring Swallow	Know-You	
Puakea	UH	Oahu	Palace Pride	Takii	FT, Oahu
Majestic			Tasty Bright	Sakata	FT, Oahu
White Contessa	Twilley/Sakata	Kula, Oahu	Daikon		
Snow Crown	Abbott	Kula	Chinese Type	Fukuda	Oahu, OP, round
Candid Charm	Sakata	FT Kunia, late	Awa Cross		Hilo
Minuteman	PetoSeed	FT Kunia, early	Minowase S Cr #3	Takii	14-16 in ,
Early Dawn	PetoSeed	FT Kunia	Volcano		
Celery			Korean Var.	HungNong	Kula
Ventura	Johnny's, Ferry	Kamuela	White Icicle	Takii	Kamuela
Starlet	Twilley		Everest	Takii	Kamuela, round
Utah 52-70R	Burpee	Kula	SDA-0103	Sakata	8-10 inch
Utah 52-75	Burpee	Kula	April Cross	Takii	Volcano, FT
Corn, sweet			Kyoto Flash	Marutane	16-20 in,
Waimanalo SS	UH, HSPA	Oahu	Marumi	Mikado	B. Island, FT
UH-10	UH, HSPA	Oahu			12 in,
All Summer Sw.	Twilley				green should FT
Lightning	Twilley				10-12 in
Sweetie	Stokes	Kula	Eggplant, Round		
Illini SS		Kamuela	Midnite	PetoSeed	Oahu
Florida Staysweet		Summer	Black Beauty	Rupp	
Cucumber, Western Slicing			Classic	Harris	Kula
Sweet Slice	Twilley	Oahu	Black Bell	Twilley	
Burpee Hybrid II	Burpee	Oahu	Burpee Hybrid	Burpee	
New Market II		Oahu	Eggplant, Long		
Slicemaster	PetoSeed	H, Oahu	Nitta	Local	Oahu
Super Sett	PetoSeed	H, Oahu	NittaxWaimanalo	UH	Oahu
Genuine	Know-You	Oahu, FT	NittaxMolokai	UH	
Lani	UH	Hilo ¹	Waimanalo Long	UH	Kula
Burpee II	Burpee	Hilo	Farmers Long	Know-You	FT
Milo	UH	bush culture ¹	Molokai Long	UH	
Dasher II	PetoSeed	Kula, Oahu	WR= resistant to white rust fungi		
Sakata #69	Sakata	Kamuela			
Prolific	Sakata	Oahu, FT			
BM-138	Hungnong	pickling FT Oahu			

¹ Resistant to cucumber mosaic virus and tolerant to watermelon mosaic virus and powdery mildew

Cultivar	Seed Company	Location/Comments	Cultivar	Seed Company	Location/Comments
Eggplant, Pickling			Lettuce, Romaine		
Black Egg		Oahu	Green Tower	Hazera	Kamuela, Kula
Money Maker		Oahu	Parris Island	Asgrow, Sun	Kula, Oahu
Short Tom	Sakata	Oahu	Valmaine	Sun	Oahu
Endive (Escarole)			Romalus		
Salad King	Sun	Oahu	Floridade		Oahu, FT
Broad Leaved			Short Guzmanine		B. Island, Oahu, FT (hydroponics, field)
Batavian	Sun	Oahu	Mustard (see cabbage, mustard)		
Ginger			Okra		
Japanese type	LC	Hilo, pungent	Blondie		Oahu
Chinese type	LC	Hilo	Annie Oakley	Burpee	Oahu
Kai choy (see cabbage, mustard)			Onion, Bulb		
Lettuce, Head			Granex 33	Asgrow	Short-short
Great Lakes	Asgrow, Sun	Hilo	Yellow Granex F1	PetoSeed	short-short
Mesa 659	Asgrow	Kula, Oahu	Mercedes	PetoSeed	short-short, FT
Salinas	Asgrow, Sun		Rio Zorro	Rio Colorado	short-short, FT
Ithaca	Asgrow, Sun		Rio Bravo	Rio Colorado	short-short, FT
Calmar			Sw. Dixie	Rio Colorado	short-short, FT
Empire	Asgrow	Oahu	Sw. Sunrise	Rio Colorado	short-short, FT
Alpha		Molokai	Jaguar	PetoSeed	short-short, FT
PS33189	PetoSeed	FT Kunia	Monsoon	PetoSeed	short-short, FT
Target	PetoSeed	FT Kunia	Savana Sweet	PetoSeed	short-short, FT
Patriot	Asgrow	FT Kunia	Cimarron	Sun	SDI, Spring, FT
El Dorado	Champion	FT Kunia	NewMex	Sun	SDI, Spring, FT
PS 33189	PetoSeed	iceberg, Kunia	Granex 429	Asgrow	SDI, Spring, FT
Lettuce, Leaf			Midstart		SDI, Spring, FT
Salina		Hydroponics, Kauai	Chula Vista	PetoSeed	medium-short, FT
Ostinata	Stokes	Hydroponics, Kauai	TX Grano 1015Y	Asgrow	med-short
Montello	Stokes	Hydroponics, Kauai	Linda Vista	PetoSeed	med-short. FT
Boston Butter	Champion	Kula	Evita		med-short, FT
Floribib		Boston, Oahu, FT	DPS-1001	Palmer	med-short, FT
Manoa	UH, Fukuda	Semi-head	Sunex-1502	Sunseeds	Kunia, FT
Anuenue	UH	Semi-head	Superex	Lockhart	Kunia, FT
Butterhead	Stokes	Oahu	Rojo	Sunseeds	Kunia, FT, red
Grand Rapids	Sun	Oahu	SR 2115	Sunseeds	Kunia, FT pungent
Salad Bowl		Oahu			
Black Seeded					
Simpson	Harris, Sun	Oahu			
Royal Oak Leaf	Sun	Oahu			
Green Ice	Burpee	Oahu			
Loyal Green		Green Leaf			
Optima	Johnny's	Boston, FT hydrop			
Sangria	Johnny's	Boston red, Ft, hydr			

Notes:

All "short-day" onion varieties can be planted from october to march.

The "Short-short" day-length varieties can also be planted from july to september.

The "medium" short day-length varieties can also be planted from april to june.

SDI= Intermediate day-length onions can be planted during spring months for harvest during summer months.

Cultivar Seed Company Location/Comments

Onion, Green

Koba strain UH Oahu
 Local strains LS Oahu

Pak choy (also see cabbage, mustard)

Joi Choi Sakata H, white stem
 Green Boy HungHong Oahu, FT
 White Pak Choy Marutane Poamoho, FT

Parsley, American

Moss Curled Sun Hilo, Oahu

Peas, Podded

Manoa Sugar UH Oahu, Kula¹
 Mammoth Melting
 Sugar Burpee, Sun Hilo, Oahu
 Dwarf Grey Sugar Sun Oahu
 Oregon Sugar Pod 2 Green Barn, SunOahu¹

¹ Resistant to powdery mildew and Fusarium wilt

Pepper, Bell

Jupiter Several OP, Molokai
 Grande Rio 66 Oahu
 Tambel 2 Sun Oahu
 S-Sweet # 760 Twilley
 Keystone Resistant
 Giant No. 3 Sun Oahu
 Mercury
 Purple Belle purplish fruits
 S Sweet #720 Twilley green/yellow
 fruits
 Wizard Peto Oahu, H, FT
 Lancelot Peto Oahu, H, FT

Pepper, Chili

Filipino type Local mild, taper to
 point
 Mexibell Sun mild, green fruit
 Anaheim M Sun hot, green turn
 red
 Hungarian Yellow Sun
 Wax Green Barn hot, light yellow
 Jalapeno M Green Barn hot, dark green
 Hawaiian Chili Local hot, yellow turns
 red

OTHERS FOR TRIAL= King Arthur, No. 860, Uranus, Orabelle, Verdel, Zohar, Bell Tower, and Zerto.

Cultivar Seed Company Location/Comments

Pumpkin

Tetsukabuto Takii FT, Kamuela¹
 Delica
 Japan Cop
 Sweet Mauna

¹ Dark green skin, orange flesh

Radish

Fancy Red Harris Oahu
 Scarlet Globe Green Barn Oahu
 Champion Stokes Oahu
 Red King Harris Oahu
 Crimson Giant Green Barn Oahu

Spinach, Horensa

Super-Alrite Takii Oahu

Squash, Italian (Zucchini)

Ambassador Twilley Maui, Hilo, Oahu
 Burpee Burpee Hilo, Oahu
 Tigress Harris Oahu/Kamuela, FT
 Spineless Beauty Rogers/Twilley Oahu, FT
 Elite Harris Moran Oahu, FT
 Botna Nunhems Oahu, FT
 Black Jack Stokes Kunia, FT
 Nobless Harris Oahu, FT
 Aztec Rogers NK Yellow, FT

Squash, Yellow

Gold Rush PetoSeed Kula

Soybean

Kahala UH RT
 Hakucho Takii Summer only

Sweetpotato

Okinawan Type LC Hilo, dry flesh
 Mokau Purple LC Hilo, dry flesh,
 Molokai
 Hoolehua Gold (83-5) LC Kula, moist flesh
 Rapoza LC Kula, dry flesh
 Waimanalo Red LC Dry flesh, Oahu
 Kona B LC moist flesh, Oahu
 71-5 LC moist flesh, Oahu
 Molokai
 83-1 LC moist flesh, Oahu
 Jewel LC moist flesh, Oahu

Cultivar	Seed Company	Location/Comments
----------	--------------	-------------------

Taro

Bun Long	LC	Hilo, Oahu (chinese type)
Lehua	LC	Hilo
Niue	LC	Samoan table taro
White Apii	LC	Kamuela, Waipio, Maui
Lehua Elena	LC	Molokai
Pii Apii	LC	Molokai

Tomato

Merced	PetoSeed	Molokai, Kamuela
PS-55289	PetoSeed	Large Fruited
Independence	Twilley	Determinate
Pole King	Twilley	Indeterminate
Healani	UH	Determinate ¹
Sweet Million	Sakata	cherry, Oahu
Red Cherry	Sun	cherry, Oahu
Sweet Chelsea	Green Barn, Sakata	cherry, Oahu
Celebrity	PetoSeed	statewide ¹

¹ Resistant to root knot nematode, fusarium wilt, and gray leaf spot.

Watermelon

Crimson Sweet	Willhite, Sun	Oahu, Kamuela, R ¹
Golden Kyokuto	Mikado	FT, Kamuela, Y ¹
Au Producer	Willhite	FT, Kamuela, R ¹
Top Yield	Twilley	Oahu
Glory	Takii	Oahu
Sugar Baby	Green Barn, Sun	Oahu
Summer Festival	Green Barn	Oahu
Sangria	Rogers	Oahu, FT
Fiesta	Rogers	Oahu, FT

¹R=Red flesh; Y= yellow flesh.

FT= For Trial

LC= Local cuttings

OP= Open Pollinated

RT= Root Knot nematode resistant

SD= Short Day

SDI= Short Day Intermediate

Oriental Veggies?

Evergreen Y.H.
POB 17538
Anaheim, CA 92817

Sunrise Enterprises (804-796-5796)
Redwood City Seed (415-325-7333)

Seed Companies

- Abbott (800-345-7333)
- Alf Christianson (206-336-9727)
- Asgrow (209-383-0172), <http://www.asgrow.com/>
- Burpee (800-999-8552)
- California Asparagus Seed (916-753-2437)
- Champion (714-529-0702), Wholesaler
- Chesmore (800-383-0865), Wholesaler
- Cooks Garden (800-457-9703, www.cooksgarden.com)
- Ferry-Morse (209-579-7333)
- Fukuda 808-841-6719
- Green Barn (800-882-7552) Wholesaler
- Harris Moran (520-783-0343 & 209-544-0330)
- Hazera Seed Limited, seed from Israel, (805-473-3452)
- HungNong (800-234-1056)
- Jersey Asparagus Farms, Inc. (609-358-2548), www.jerseyasparagus.com/
- Johnny's (207-437-4301, www.johnnyseeds.com)
- Keithly Williams (800-533-3465)
- Known-you seed Co., Ltd., 26, Chung Cheng 2nd Road, Kaohsiung, Taiwan
- Marutane Co. C.P.O. Box 65, Kyoto 600 Japan.
- Midwest Seed Growers Inc.(Wholesaler), 800-873-7333
- PetoSeed (805-647-1188)
- Rio Colorado, see Champion & rcsi@primenet.com
- Rupp (800-700-1199) Wholesaler
- Sakata (408-778-7758)
- Shamrock, Wholesaler (800-351-4443)
- Stokes (416-688-4300)
- SunSeed (800-733-9505, www.sunseeds.com)
- Takii (831 443-4901, takii@email.msn.com)
- Technisem, France, tropical veggies, technisem@wanadoo.fr
- Terra Seed, Wholesaler, (800-950-2425)
- Twilley (800-622-7333)
- Univ. Hawaii (808-956-2152)
- Willhite (800-828-1840)

Cover Crops Seed? Contact:

Alberta Wheat Pool (403-290-4904)

Arbico Inc. (800-827-2847, www.arbico.com)

Comstock, Ferree and Co., 860-571-6590,

www.tiac.net/users/comstock

Cross Seed Co. (913-483-6163)

Harmony Farm Supply (707-823-9125)

Hawaiian Seed Ranch Supply (808-239-9644)

Hikiloa Coop, Molokai, (808-567-6774)

Kaufman Seeds (501-898-3328)

Ohio Seed Co.

POB 87

West Jefferson, Ohio 43162-0087

Peaceful Valley (916-272-4769 or philrad@oro.net)

References

Note: To obtain a copy of some of the more recent publications listed below, please contact Hector Valenzuela at hector@hawaii.edu, tel. 808-956-7903, or fax. 808-956-3894.

1. Arakaki, A. and H. Valenzuela. 1995. Cucumber variety trials in Molokai. Univ. Hawaii at Manoa, Coop. Ext. Serv. Vegetable Crops Update Newsl. Vol. 5 no. 2, pg. 1.
2. Arakaki, A. and H. Valenzuela. 1995. Broccoli cultivar trials in Molokai. . Univ. Hawaii at Manoa, Coop. Ext. Serv. Vegetable Crops Update Newsl. Vol. 5 no. 2, pg. 4.
3. Arakaki, A. and H. Valenzuela. 1995. Carrot cultivar trials in Molokai. . Univ. Hawaii at Manoa, Coop. Ext. Serv. Vegetable Crops Update Newsl. Vol. 5 no. 2, pg. 6
4. Arakaki, A. and H. Valenzuela. 1995. Head cabbage summer cultivar trials in Molokai. . Univ. Hawaii at Manoa, Coop. Ext. Serv. Vegetable Crops Update Newsl. Vol. 5 no. 2, pg. 7.
5. Fukuda, S., and H. Valenzuela. 1993. Pepper cultivar trials. CTAHR Veg. Crops Update Newsl. 3(4):5-6.
6. Goo, T. and H. Valenzuela. 1999. Red leafy lettuce cultivar evaluation in a greenhouse non-circulating hydroponics system, March to April, 1998. Univ. Hawaii at Manoa, Coop. Ext. Service, Misc. Pub.
7. Hamasaki, R. 1989. Cucumber variety trial field day at Waimanalo. Oahu Veg. Grow. News. Rep. 4. Hybrid Cucumber trial results. Rep. 5.
8. Hamasaki, R. 1989. Molokai sweet potato trial results. Oahu Veg. Grow. Newsl. Rep. 5.
9. Hamasaki, R. 1989. Field day for TSW resistant tomato hybrid candidates held on Maui. Veg. Grow. News. Report No. 6.
10. Hamasaki, R. 1990. Daikon variety trial conducted at Volcano Experiment Station. Veg. Grow. News Rep. 7.
11. Hamasaki, R.T. and H.D. Sato. 1992. Vegetable Cultivars for the Oahu Home Garden. Univ. Hawaii, Oahu County Lf. 27.
12. Hori, T. 1989. Results of the cucumber variety trial. Maui Veg News. June 9.
13. Hori, T. 1989. Chinese cabbage variety trial. Maui Veg News. July 13.
14. Hori, T. 1989. Onion trial. Maui Veg. News. Oct. 2, 1989.
15. Hori, T. 1989. Tomato spotted wilt virus screening trial. Maui Veg. News. Dec. 1.
16. Hori, T. 1989. Vegetable Variety trials from around the state (daikon, sweet potato, cucumber). Maui Veg. News. Dec. 1.
17. Shimabuku, R., H.R. Valenzuela, R. Paull, M.Wall, and M. Austin. Sweet onion variety trials, Kula, Maui, 1997 & 1998 Final Results. Univ. Hawaii at Manoa, Coop. Ext. Serv. Project Report.
18. Valenzuela, H.R. 1995. Daikon cultivar trials in Poamoho. . Univ. Hawaii at Manoa, Coop. Ext. Serv. Vegetable Crops Update Newsl. Vol. 5 no. 2, pg. 8.
19. Valenzuela, H.R. 1996. Marutane leafy green variety trial in Poamoho, Spring 1995. Univ. Hawaii at Manoa Coop. Ext. Serv. Vegetable Crops Update Newsl. Vol. 6, No. 2. Pg. 9.
20. Valenzuela, H.R. 1996. Low elevation sweet bulb onion trial at UH Waimanalo Experiment Station. Univ. Hawaii at Manoa Coop. Ext. Serv. Vegetable Crops Update Newsl. Vol. 6, No. 2. Pg. 3.
21. Valenzuela, H.R. and C. Crosby. 1999. Leafy crop cultivar trial, Waimanalo, Winter 1996. Univ. Hawaii at Manoa, Coop. Ext. Service, Misc. Pub.
22. Valenzuela, H.R., T. Goo, and C. Crosby. 1999. Bush bean variety trials. Univ. Hawaii at Manoa, Coop. Ext. Service, Hort. Dept., Miscellaneous Publication. 17 pp.
23. Valenzuela, H.R., T. Goo, and S.M. Migita. 1998. Leafy crop variety trial, Poamoho, Spring 1998. Univ. Hawaii at Manoa, Coop. Ext. Service, Misc. Pub.
24. Valenzuela, H.R. and R. Hamasaki. 1993. Tomato spotted wilt virus resistant tomato lines, cultivar evaluations. Veg. Crops Update Newsl. 3(4):1-2.
25. Valenzuela, H.R. and J. DeFrank. 1993. Eggplant cultivar trials. Veg. Crops Update Newsl. 3(4):3-4.
26. Valenzuela, H.R. and C. Hooks. 1996. Bell pepper cultivar trials in Waimanalo. Univ. Hawaii at Manoa Coop. Ext. Serv. Vegetable Crops Update Newsl. Vol. 6, No. 2. Pg. 7-8.
27. Valenzuela, H.R. and R. Mau. 1993. Cabbage cultivar trials. Veg. Crops Update Newsl. 3(4):4-5.
28. Valenzuela, H.R., J. McHugh, C.R. Hooks, and S. Riede. 1996. Zucchini Elite: Summer/fall zucchini cultivar trials conducted in Poamoho and Kunia in Central Oahu, and Kamuela, Hawaii. Univ. Hawaii at Manoa, Coop. Ext. Serv. Vegetable Crops Update Newsletter, Vol. 6, no. 3. Pg. 1-8.
29. Valenzuela, H.R. and S. Riede. 1995. Zucchini cultivar trials. . Univ. Hawaii at Manoa, Coop. Ext. Serv. Vegetable Crops Update Newsl. Vol. 5 no. 2, pg. 10.
30. Valenzuela, H.R. and S. Riede. 1996. Lettuce cultivar evaluation in a greenhouse non-circulating hydroponics system. Univ. Hawaii at Manoa, Coop. Ext. Service, Vegetable Crops Update Newsletter, Vol. 6, no. 3. Pg. 9-10.
31. Valenzuela, H.R. and D. Sato. 1994. Chinese cabbage cultivar trials in Volcano. Veg. Crops Update Newsl. 4(1):6.
32. Valenzuela, H., D. Sato, M. Yamasaki, G. Maehira R. Cupples, S. Riede, and C.R. Hooks. 1996. Daikon variety trials. Univ. Hawaii at Manoa Coop. Ext. Serv. Vegetable Crops Update Newsl. Vol. 6, No. 2.
33. Valenzuela, H.R. T. Goo, D. Sato, and S.M. Migita. 1999. Trellised cucumber variety trials. Univ. Hawaii Coop. Ext. Serv. Misc. Publication.

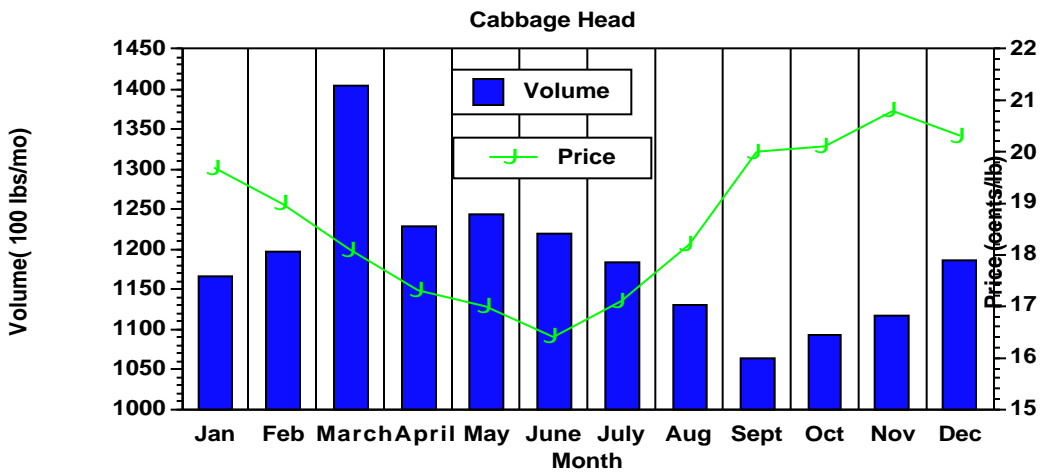
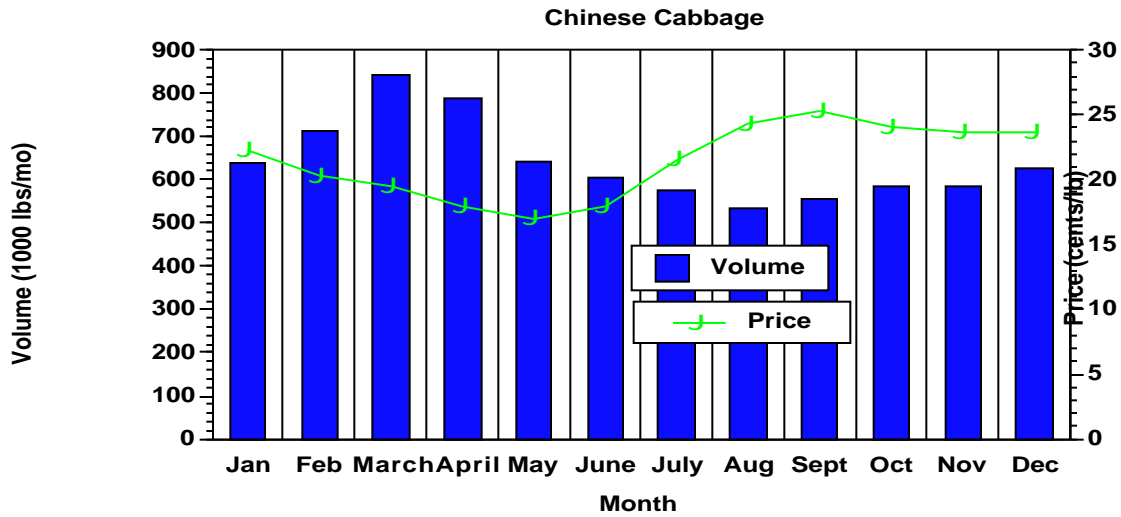
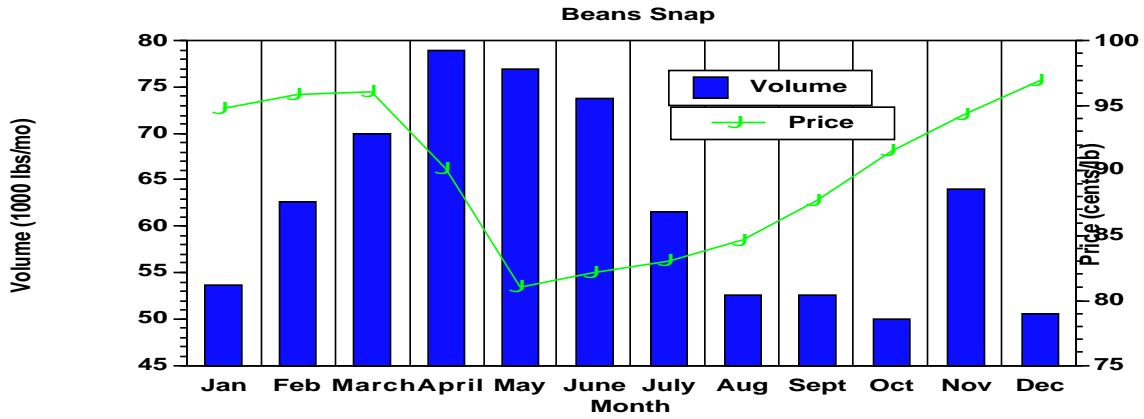
34. Valenzuela, H.R., T. Goo, and C. Crosby. 1999. Specialty eggplant variety trial report. Univ. Hawaii at Manoa, Coop. Ext. Serv. Misc. Pub., Sept. 10, 1999.
35. Valenzuela, H.R. T. Goo, and S.M. Migita. 1999. 1999 Specialty tomato variety trials: Report. Univ. Hawaii at Manoa, Coop. Ext. Serv. Misc. Pub. Aug. 19, 1999.
36. Valenzuela, H.R. and T. Goo. 1999. Leafy crop variety trials 1995-1999. Univ. Hawaii at Manoa, Coop. Ext. Service, Misc. Pub.

Mean Monthly Farm-gate Price and Volume of Commercial Vegetables Grown in Hawaii, 1986-1997 (obtained from annual DOA statistics)

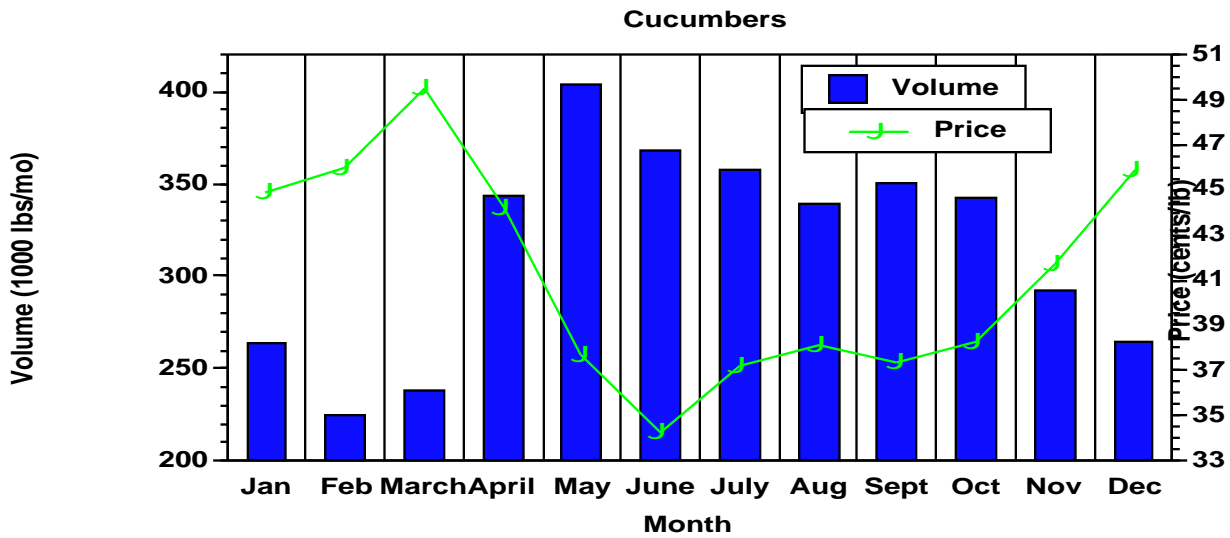
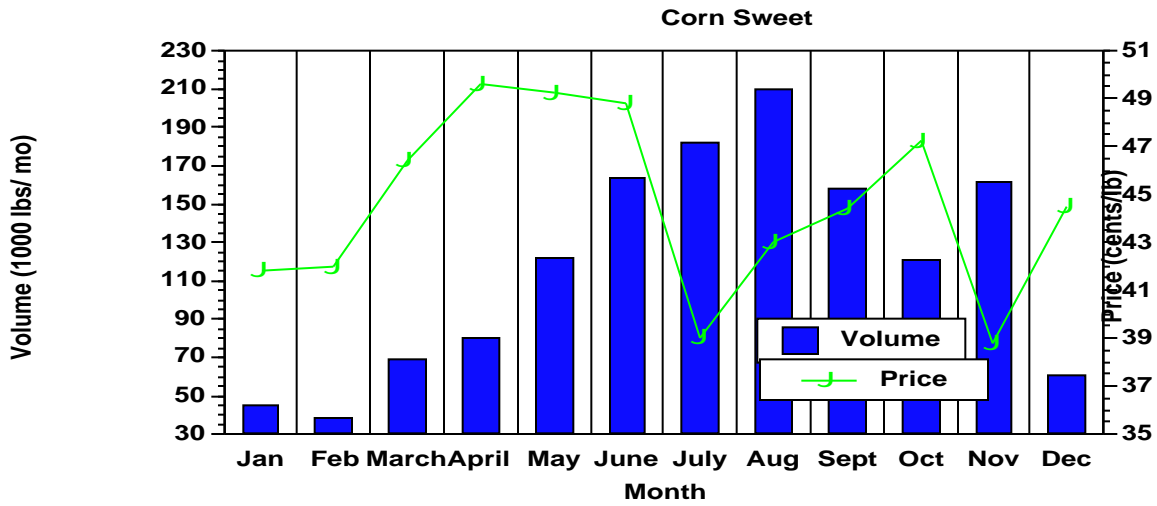
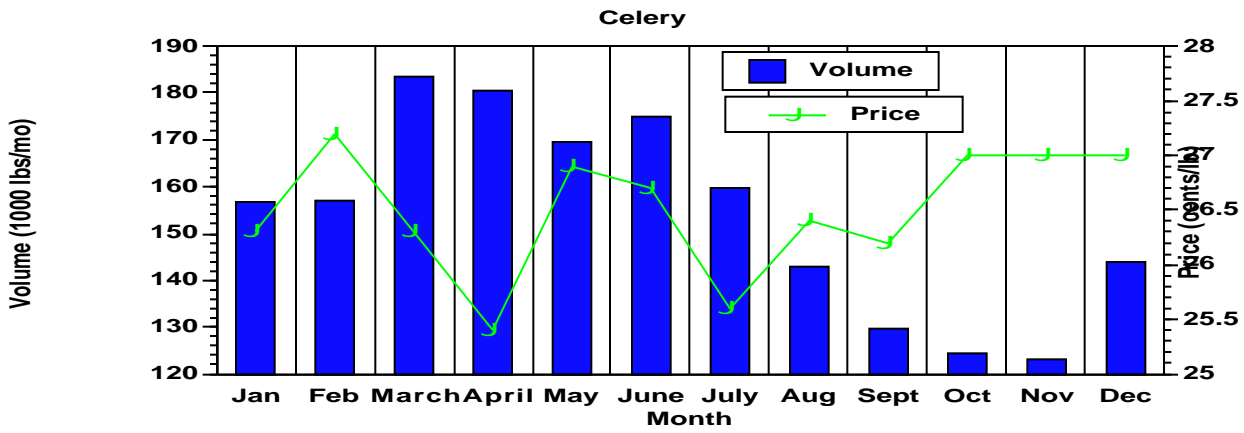
Crop	page no.
Snap beans	9
Chinese cabbage	9
Head cabbage	9
Celery	10
Sweet corn	10
Cucumbers	10
Daikon	11
Green onions	11
Pepper	11
Lettuce	12
Romaine	12
Sweetpotato	12
Tomato	13
Watermelon	13

Prepared by: Hector R. Valenzuela, Dept. of Horticulture, University of Hawaii at Manoa, 3190 Maile Way No. 102, Honolulu, HI 96822-2279, Tel. 808-956-7903, Fax. 808-956-3894, hector@hawaii.edu. Thanks to Trisha Wong for help in data compilation, preparing the graphs, and layout. The data was obtained from DOA annual ag reports.

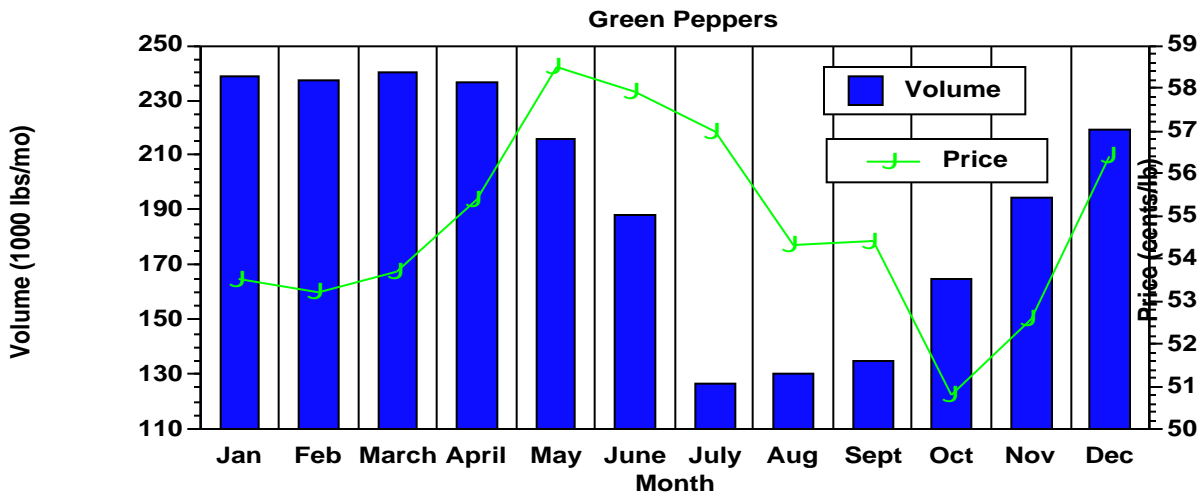
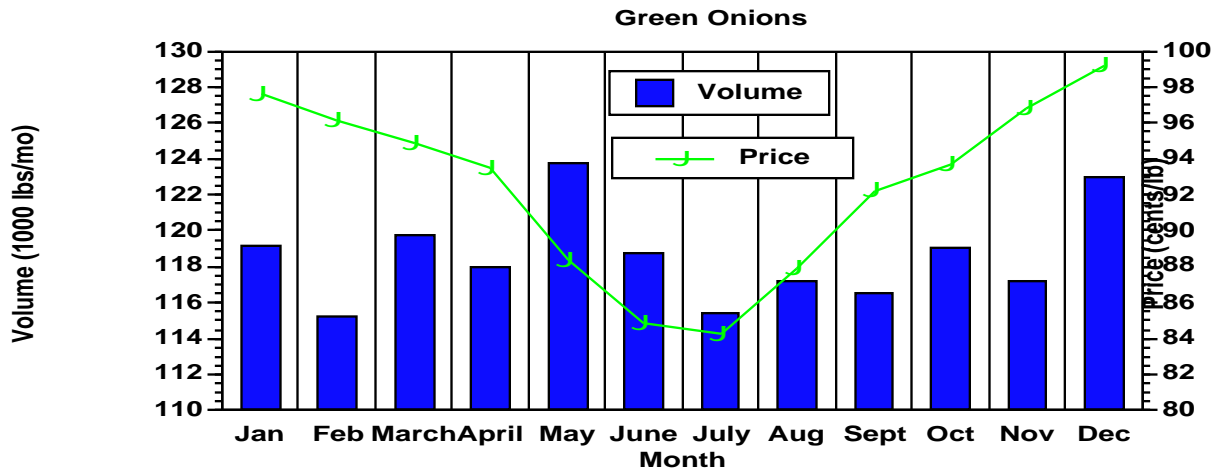
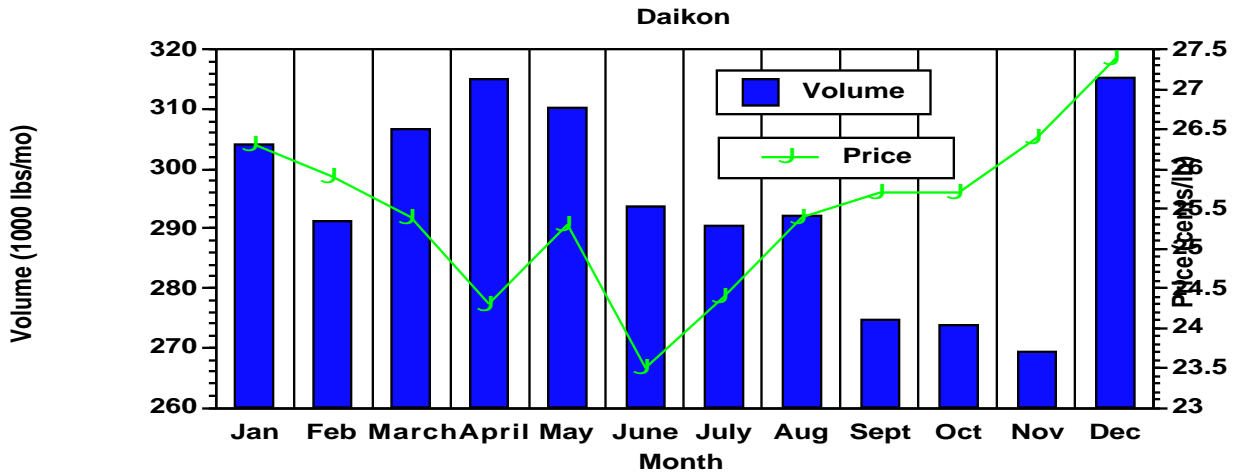
Mean Monthly Farm-gate Price and Volume of Commercial Vegetables in Hawaii, 1986-1997



Mean Monthly Farm-gate Price and Volume of Commercial Vegetables in Hawaii, 1986-1997

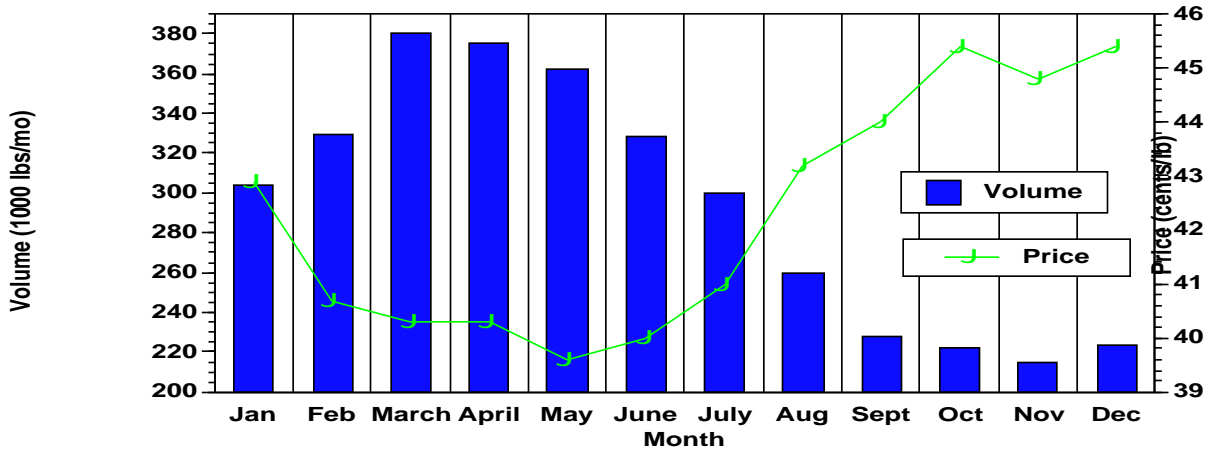


Mean Monthly Farm-gate Price and Volume of Commercial Vegetables in Hawaii, 1986-1997

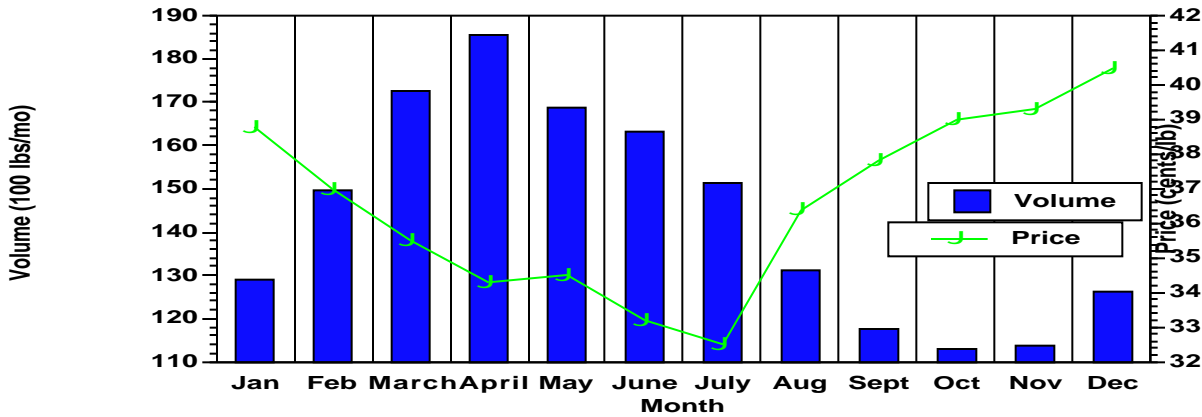


Mean Monthly Farm-gate Price and Volume of Commercial Vegetables in Hawaii, 1986-1997

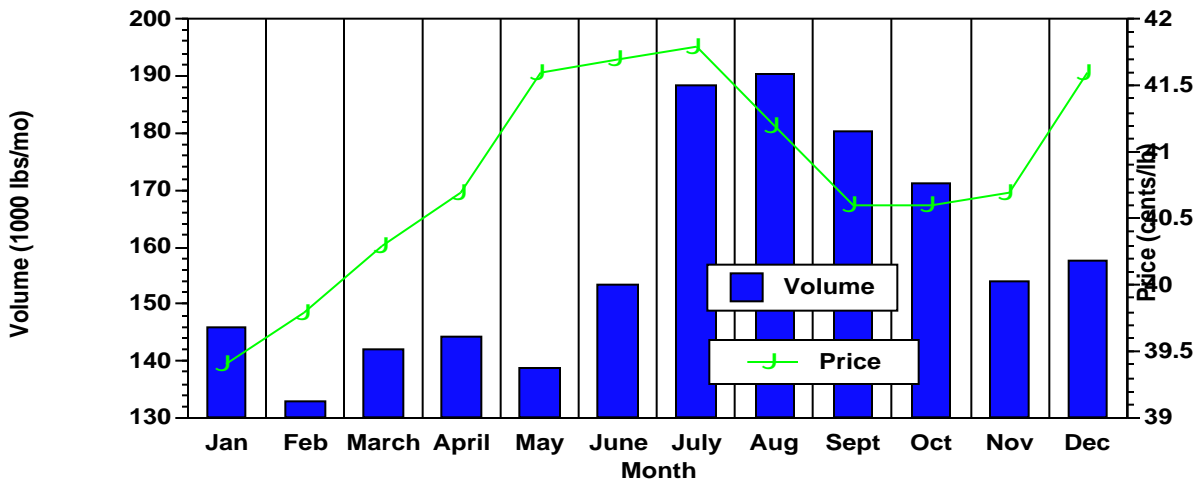
Lettuce



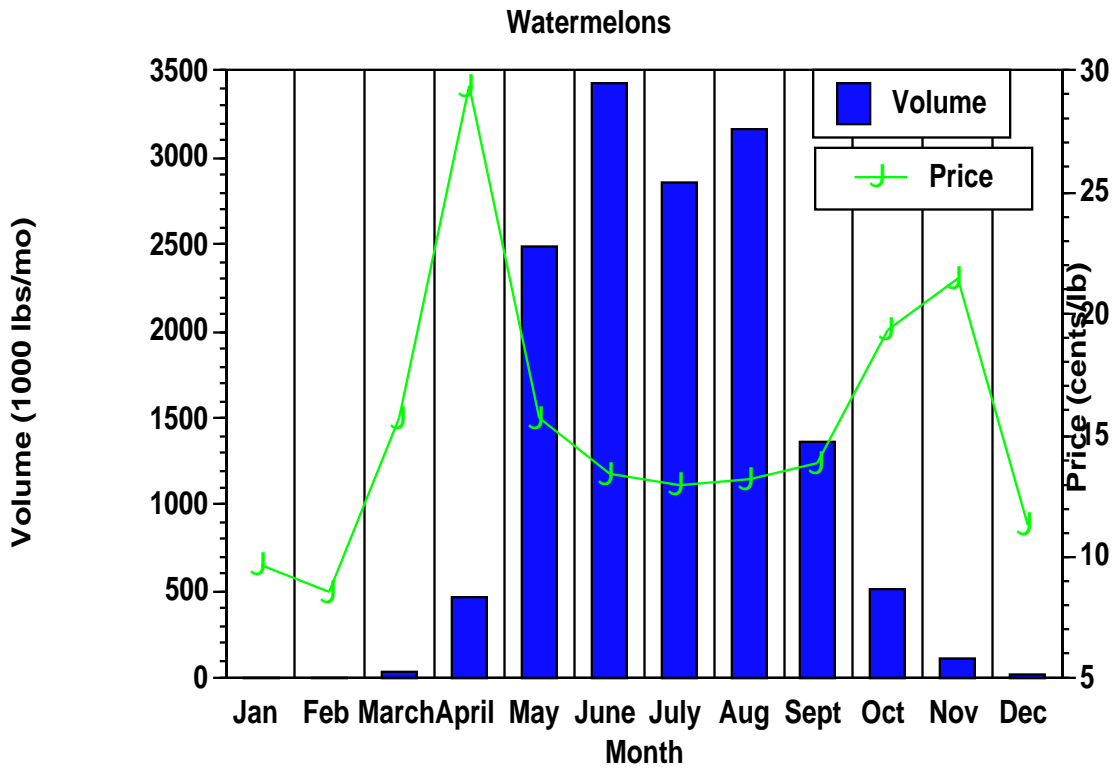
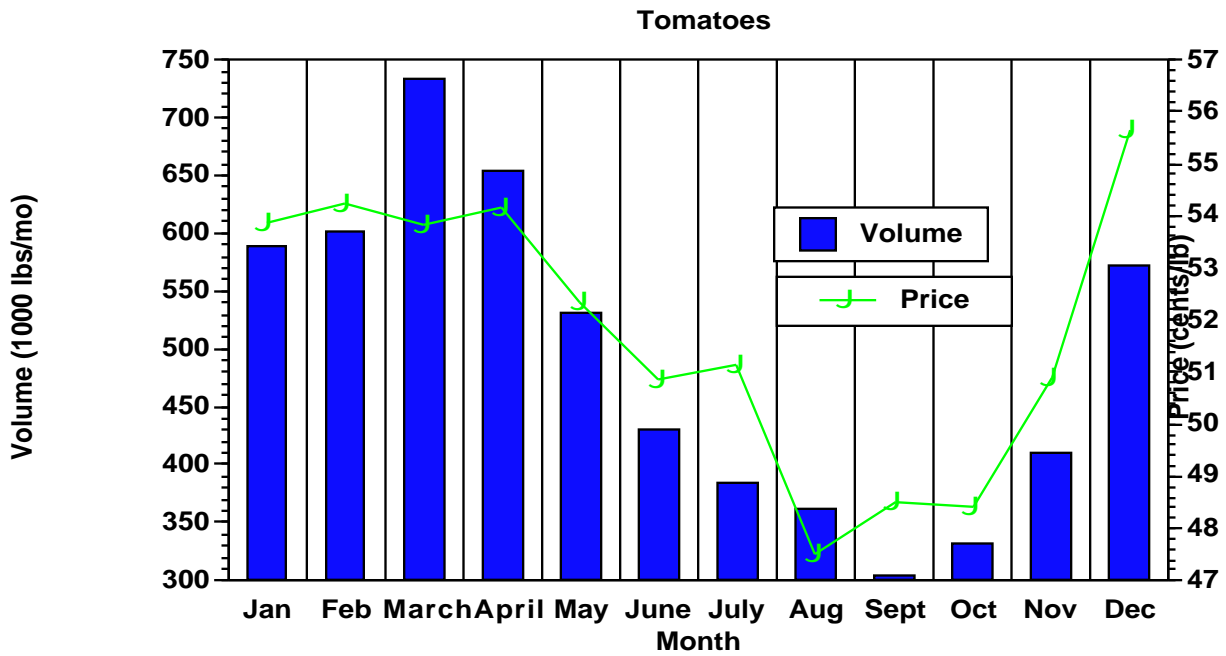
Romaine



Sweet Potatoes



Mean Monthly Farm-gate Price and Volume of Commercial Vegetables in Hawaii, 1986-1997



Sign Up to UH Ergonomics Project!!

What: One-hour free Training at the farm
Subject: Ergonomics (to reduce farm injuries and worker safety)
Contact: call Trish Won, UHM Dept. Public Health, 734-0448 or
Dr. Prenlata Menoa, fax. 956-4585 (fax the enclosed form)

In today's Hawai'i workforce, there has been an increase of injuries and illnesses due to disorders associated with cumulative trauma disorders (CTDs), such as repetitive motion, and overexertion resulting in lost workdays. Also, workers compensation costs are approximately twice the amount of medical costs because worker's compensation costs include payment for lost workdays and compensation for disabilities.

Therefore, here At the University of Hawaii School of Public Health, we have developed an ergonomics awareness training protocol for small businesses in Hawaii. We would like to collaborate with small agricultural and horticultural businesses and wish to pilot test this training protocol with you and your employees. We are offering your company up to one hour of free training at your worksite and at your convenience, We wish to emphasize that our role would not be to enforce. We will work with your employees with the intent of facilitating changing or modifying work practices in order to decrease injury and strain on employees. At this session, we will discuss examples of the Twelve Principles of Ergonomics. All discussion will be kept strictly confidential and will be sized in group format.

If you are interested in participating in this ergonomics training program, please call Tisha Won, MPH student, School of Public Health University of Hawai'i at Manoa, at 734-0448 or fax the enclosed form to Dr. Prernlata Menon at 956-4585.